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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,691	11/11/2002	Sverker Alfredsson	07589.0060PC	2337

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EXAMINER

LEWIS, TISHA D

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,691

Applicant(s)

ALFREDSSON, SVERKER

Examiner

TISHA D. LEWIS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

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DETAILED ACTION

The following is a first action on the merits of application serial no. 10/065,691 filed on November 11, 2002.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Sweden on May 11, 2000. It is noted, however, that applicant has not filed a certified copy of the Swedish application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

The information disclosure statement filed on December 17, 2002 has been acknowledged.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it is currently over 150 words. Correction is required. See MPEP § 608.01(b).

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Claim Objections

Claims 1, 8 and 13 are objected to because of the following informalities:

- In the claim 1, lines 8 and 10, --ring-- should be inserted between "the gear",
- In the claim 8, line 4, --is-- should be inserted between "wheel observed",
- The indentation of claim 13 should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson ('538) in view of Pigozzi ('062). As to claims 1, and 8-14, Larsson discloses a range gearbox (3) connected to the output of a basic gearbox including:

a planetary gear (7), enclosed in a housing (3), with a sun wheel (9) arranged (rigid, no axial movement) on an input shaft (5) and engaged with planet wheels (10) which are carried by a planet carrier (12) connected (rigid, no axial movement) to an output shaft (8) and engageable with an axially displaceable ring gear (14) which has a first position for being locked to the housing and a second position for connecting to the output shaft via the planet carrier (column 3, lines 28-48) wherein interacting teeth of the planetary gear engage to provide torque between the input and output shafts during

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high and low range positions, but the teeth are not angled to provide axial force to assist shifting between the first and second positions.

Pigozzi discloses an auxiliary gearbox (4) connected to the output of a main gearbox (2) including:

a planetary gear (3) enclosed in a housing (4) with a sun wheel (22) arranged on an input shaft (13) to rotate in a clockwise direction and engaged with planet wheels (43) which are carried by a train carrier (46) and engageable with an axially displaceable crown gear (56) which has a first position and a second position (column 8, lines 9-17) wherein interacting teeth of the planetary gear are angled (column 4, lines 54-56) and the angled teeth of the sun wheel is directed to the right (Figure 2) to provide an axial thrust (S1) to shift the crown gear during speed reduction (epicyclic reducing gear) in the same direction with the external shifting thrust (sleeve or fork) (column 5, lines 13-44).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the planetary gear interacting teeth of Larsson with an angle configuration in view of Pigozzi to reduce high level noise generated between the interacting teeth of the planetary gear during operation.

As to claims 2 and 15, Larsson discloses the ring gear (14) connected non-rotatably to a coupling sleeve (18) arranged concentrically with the output shaft and serves as the ring gear carrier.

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As to claims 3 and 16, Larsson discloses the coupling sleeve engaging in a first coupling position with a first coupling ring (21) fixed to the planet carrier and in a second coupling position with a second coupling ring (25) fixed to the housing.

As to claims 4 and 17, Larsson discloses the coupling rings having mutually facing synchronizing cones (23, 26) interacting with synchronizing rings (24, 27) engaging with the coupling sleeve.

As to claims 5 and 18, Larsson discloses the synchronizing rings (23, 26) pressable against the synchronizing cones (24, 27) by an annular spring (34) arranged between the cones and providing a first coupling position accommodated in a first groove (32) in sleeve (18) and another coupling position accommodated in a second groove (33) in sleeve (18).

As to claims 6 and 19, Larsson discloses the coupling sleeve having an annular flange (17) with external splines (16) engaging internal splines (15) on the ring gear (14) wherein the sleeve is axially fixed to the ring gear by a locking ring (19) accommodated in a groove in the ring gear.

As to claims 7 and 20, Larsson discloses an extension of teeth in the ring gear used to provide rotational locking of the ring gear to the sleeve.

FACSIMILE TRANSMISSION

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is **(703) 305-3597**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In

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general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to
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Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

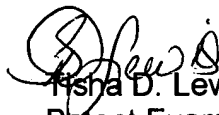
-Oun ('993) is cited as having a planetary arrangement for a gearbox having an axially displaceable ring wheel (24) and Holdeman ('042) is cited as having a helical planetary arrangement for a gearbox having an axially displaceable sun gear.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TISHA D. LEWIS whose telephone number is 703-305-0921. The examiner can normally be reached on M-Thur 8 AM TO 3 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHARLES A. MARMOR can be reached on 703-308-0830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3597 for regular communications and 703-305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.


Tisha D. Lewis
Patent Examiner
AU 3681
January 15, 2003